Please amend the claims in the above-identified patent application as follows wherein deleted material is marked with a ~~strikethrough~~ and new material is underlined to show the changes made:

1   1. **(Currently amended)**   A method of constructing a model for

2   estimating <u>at least one</u> electrical <u>characteristic</u> ~~characteristics~~ for an extraction <u>sub-</u>

3   problem, said method comprising:

4   identifying a set of physical measurements <u>of integrated circuit components</u> that

5   define said extraction <u>sub-</u>problem;

6   selecting a set of training cases for said specific extraction <u>sub-</u>problem, each of

7   said training cases including an associated set of said physical measurements;

8   solving said specific extraction <u>sub-</u>problem for each of said training cases using

9   said associated set of physical measurements as an input to an accurate physics

10   based model to generate an associated output; and

11   training a machine-learning model with Bayesian inference using said associated

12   set of physical measurements and associated outputs as training data.

1   2. **(Original)**   The method as claimed in claim 1 wherein said electrical

2   characteristic comprises capacitance.

1   3. **(Original)** The method as claimed in claim 1 wherein said electrical

2   characteristic comprises resistance.

1   4. **(Currently amended)** The method as claimed in claim 1 wherein

2   said extraction sub-problem comprises a section of interconnect wire and nearby

3   interconnect wiring within a define halo.

1   5. **(Currently amended)** The method as claimed in claim 1 wherein

2   said extraction sub-problem comprises a section of interconnect wiring.

1   6. **(Currently amended)** The method as claimed in claim 1 wherein

2   one of said set of physical <u>measurements</u> ~~parameters~~ comprises a spacing between a pair

3   of interconnect lines.

1   7. **(Currently amended)** The method as claimed in claim 1 wherein

2   one of said set of physical <u>measurements</u> ~~parameters~~ comprises a wire width.

1   8. **(Currently amended)** The method as claimed in claim 1 wherein

2   one of said set of physical <u>measurements</u> ~~parameters~~ comprises a wire length.

1   9. **(Currently amended)**   The method as claimed in claim 1 wherein

2   selecting a set of training cases comprises randomly generating input <u>measurements</u>

3   ~~parameters~~ with a gamma probability distribution.

1   10. **(Original)**   The method as claimed in claim 1 wherein said

2   electrical characteristic comprises delay.

1   11. **(Original)**   The method as claimed in claim 1 wherein said

2   machine-learning model comprises a neural network.

Please add the following new claims:

1   12. **(New)**   A computer-readable medium, said computer-readable

2   medium comprising a set of instructions for constructing a model for estimating at least

3   one electrical characteristic for an extraction sub-problem by performing the steps of

4   method of:

5   identifying a set of physical measurements of integrated circuit components that

6   define said extraction sub-problem;

7   selecting a set of training cases for said specific extraction sub-problem, each of

8   said training cases including an associated set of said physical measurements;

9   solving said specific extraction sub-problem for each of said training cases using

10   said associated set of physical measurements as an input to an accurate physics

11   based model to generate an associated output; and

12   training a machine-learning model with Bayesian inference using said associated

13   set of physical measurements and associated outputs as training data.

1   13. **(New)**   The computer-readable medium as claimed in claim 12

2 wherein said electrical characteristic comprises capacitance.

1   14. **(New)**   The computer-readable medium as claimed in claim 12

2 wherein said electrical characteristic comprises resistance.

1   15. **(New)**   The computer-readable medium as claimed in claim 12

2 wherein said extraction sub-problem comprises a section of interconnect wire and nearby

3 interconnect wiring within a define halo.

1   16. **(New)**   The computer-readable medium as claimed in claim 12

2 wherein said extraction sub-problem comprises a section of interconnect wiring.

1   17. (New)   The computer-readable medium as claimed in claim 12
2 wherein one of said set of physical measurements comprises a spacing between a pair of
3 interconnect lines.

1   18. (New)   The computer-readable medium as claimed in claim 12
2 wherein one of said set of physical measurements comprises a wire width.

1   19. (New)   The computer-readable medium as claimed in claim 12
2 wherein one of said set of physical measurements comprises a wire length.

1   20. (New)   The computer-readable medium as claimed in claim 12
2 wherein selecting a set of training cases comprises randomly generating input parameters
3 with a gamma probability distribution.